STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY GEORGE DEUKMEJIAN, *Governor*

DEPARTMENT OF HEALTH SERVICES
2151 BERKELEY WAY
BERKELEY, CA 94704

INSPECTION REPORT

JAN 1 1 1990

SRI INTERNATIONAL
Corral Hollow Experimental Site
Corral Hollow Road
Tracy, CA 95376
(415) 373-0185
EPA ID#: CAD980883847

Inspected by: Gregory Grunner

Date of Inspection: September 13, 1989
Date of Report: October 2, 1989

I. Purpose

Scheduled RCRA Compliance Evaluation and Generator, Transporter, & Land Disposal Restriction Inspection.

II. Representatives Present

SRI International:
Mariano Caunday, Safety Specialist
Tom Gaines, Test Site Supervisor
Gary Greenfield, Technical Services Manager
Sherry Hanen, Health & Safety Director

Department of Health Services/TSCP:
Gregory Grunner, Hazardous Materials Specialist

III. Owner/Operator

The Corral Hollow Experimental Test Site (CHES) located in Tracy is owned by SRI International, a research institute based in Menlo Park, California. The personnel directly responsible for environmental health and safety at CHES facility are: Mariano Caunday, Safety Specialist; Tom Gaines, Test Site Supervisor; Gary Greenfield, Technical Services Manager; and Sherry Hanen, Health & Safety Director.

IV. Background

According to Department of Health Services (Department) hazardous waste facility files, CHES was last inspected by the Department on September 16, 1987; October 21, 1987; and January 6, 1988. As a result of these inspections, a total of 15 violations of the California Code of Regulations were observed. A Report of Violation detailing these violations

was issued by the Department to SRI on January 19, 1988. A Corrective Action Order and Complaint for Penalty were issued by the Department to SRI on January 29, 1988. SRI International responded by filing a Notice of Defense to the Order and Complaint on February 2, 1988.

SRI International and the Department entered into a Consent Agreement and Order on March 6, 1989, Docket HWCA 87-88014 (attachment 1). This Consent Order stipulates a number of requirements and limitations upon SRI and the Department regarding Waste Analysis; the submission of a Closure Plan; the Treatment, Storage, and Disposal of Hazardous Waste; Civil Penalties; Site Access; Additional Enforcement Actions; and other applicable issues. Among the stipulations of the Consent Agreement is that SRI will no longer treat, store, or dispose of hazardous waste following the closure of Area No. 2 at CHES. According to SRI International, Area No. 2 was closed by May 6, 1988.

V. General Description of Facility

The CHES facility is located southwest of the City of Tracy in San Joaquin County. The facility is surrounded by the Carnegie State Vehicle Recreation Area, land used primarily for off-road motorcycle riding.

The facility is situated in rugged and hilly terrain and the active areas of the site are located at an altitude of approximately 1700 feet (see facility map, attachment 2). The facility has a number of small buildings, sheds, and bunkers on the site which house offices, workshop areas, tool and equipment storage, analytical and measurement instrumentation, etc. There is no designated hazardous waste storage area. Explosive materials (both untouched product and scraps) are stored in concrete bunkers in the magazine area.

VI. Hazardous Waste Activity Description

According to the SRI International/Department of Health Services Consent Agreement and Order, SRI shall at no time treat, store, or dispose of hazardous waste at CHES after the closure of Area 2. Inspection and discussion with SRI CHES staff confirmed that the treatment area within Area 2 was undergoing closure and that no hazardous waste was being treated, stored, or disposed of at Area 2 or at any other locations within the facility.

VII. Violations

No violations were observed.

VIII. Observations

The following observations were made during the inspection of SRI CHES on September 13, 1989.

Upon arrival at the facility, I met with Mariano Caunday, Tom Gaines, Gary Greenfield, and Sherry Hanen at a meeting room near the main facility storage building. During our initial meeting, we discussed the purpose of my inspection and the nature of the regulatory requirements placed upon CHES by the SRI/Department Health Services Consent Agreement and Order. Mr. Greenfield briefly described the facility and the major research activities and answered my questions.

Following the opening interview, we toured the facility, beginning with Research Area 1. Area 1 consisted of a concrete bunker housing electronic instrumentation and several explosive test areas. The test areas primarily consisted of a large, flat concrete pad and miscellaneous machined metal test equipment. According to Mr. Greenfield, Area 1 was historically used for research only and was not used for the treatment of hazardous waste. Presently, some explosive scraps are detonated at this location to test instrumentation in preparation for research detonations and occasionally detonated for training or demonstration blasts.

Following inspection of Area 1, we drove to Research Area 2. Area 2 was similar to Area 1, with the exception of an empty water pool used to test small models and a movable corrugated metal shed situated next to the concrete bunker used to conceal classified research projects. Area 2 also had a lower area, reached by descending a wooden staircase. This lower area was originally created for research and testing purposes. Later, however, due to flooding problems during the winter, research was moved to other areas of the facility and the lower area of Area 2 was used to incinerate (i.e., non-detonation burning) and detonate hazardous explosive wastes before the signing of the SRI/Department of Health Services Consent Agreement and Order. This area consists of a small, flat expanse of earth with one small concrete and steel pad (attachment 3: photos 1, 2, 3, & 4). According to Mr. Greenfield, this area is presently undergoing closure, pending approval of the SRI CHES Closure Plan (attachment 4), and is not being used for any purpose.

Following inspection of Area 2, we drove to the Magazine Area. The Magazine Area is used to store explosive material, scraps of explosive material, and detonators and consists of several storage bunkers. We examined a concrete storage bunker which contained sheet explosives and scraps (attachment 3: photo 6). The bunker is constructed of

concrete and has a steel door with two locks, a chain link fence with two locks on the gate, and is protected by an electronic surveillance system (attachment 3: photo 5). A sign was posted on the inside of the bunker door which summarized the proper storage and care of explosives (attachment 3: photo 7). The outside of the bunker is marked with the number one within a red octagon which indicates that in the event of a fire, the area should be evacuated and no attempt should be made to fight the fire. According to Mr. Greenfield, the Magazine Area was used to store hazardous waste when hazardous waste was being treated at the facility. Presently, only non-waste explosive scraps are being stored at the Magazine Area.

Following inspection of the Magazine Area, we returned to the meeting room near the main facility storage building.

IX. Sampling Summary

No samples were taken.

X. Discussion with Management

The inspection and activities at CHES were discussed with Mariano Caunday, Tom Gaines, Gary Greenfield, and Sherry Hanen.

In response to my questions, Gary Greenfield stated that no hazardous wastes are presently being generated, treated, or transported by or at the CHES facility. He also stated that all scrap explosives created by the research activities at CHES are expended in: other research activities; the training of CHES technicians; and demonstration blasts. Previously, new, untouched explosives were used for these purposes. Mr. Greenfield explained that since the explosive material was relatively inexpensive, no motivation previously existed for SRI to save the explosive scraps created by research activities. Now, however, SRI saves explosive scraps as product for these purposes because of the requirements of the Department and the SRI International/Department of Health Services Consent Agreement and Order.

Mr. Greenfield also stated that although all the explosives are very precisely tracked regarding quantity expended and quantity remaining, the scraps of explosives are not tracked regarding the time that elapses between when they are created and when they are detonated. Mr. Greenfield also stated that the scraps of explosives are not rotated as they are created and detonated. In other words, CHES does not

follow a "first in, first out" procedure with the scraps of sheet explosives.

In response to my questions regarding the nature of the explosive material that was tested and treated on site, Mariano Caunday stated that the active explosive ingredient in the sheet explosive used for research at CHES is a compound called PETN and provided a copy of the Material Safety and Data Sheet for this material (attachment 5).

Mr. Greenfield asked if the SRI CHES file at the Department's offices was open to the public. I responded that the Department is required by statute to keep its facility files open for public review. He asked if there was any way to keep the CHES records confidential. I responded that the Department would consider a file confidentiality request if such a request was made in writing and was provided with adequate justification. I told Mr. Greenfield that I would send him information regarding file confidentiality requests.

Ms. Hanen expressed concern that it was taking a long time to get the CHES Area 2 Closure Plan approved by the Department. I recommended that she contact the Department and inquire as to its status. Ms. Hanen stated that she had already done this a number of times, with no success. I told Ms. Hanen that I would try to find out the status of the CHES Closure Plan and then relay the information to her.

In closing, I told the SRI International representatives that, as far as I could detect from my inspection, there were no readily visible violations of the hazardous waste control regulations and that SRI CHES was, as far as I could determine, complying with the requirements of the SRI International/Department of Health Services Consent Agreement and Order.

XI. Attachments

1. Consent Agreement and Order, 9 pgs.
2. Facility Map, 1 pg.
3. Photographs, 4 pgs.
4. SRI CHES Area 2 Closure Plan, 6 pgs.
5. PETN Material Safety Data Sheets, 7 pgs.
6. Generator Checklist, 20 pgs.
7. Transporter Checklist, 16 pgs.
8. Landban Checklist, 11 pgs.
9. Inactive Facility Checklist, 26 pgs.

Gregory Grunner
Hazardous Materials Specialist

10/2/89
Date Submitted

Patricia Payne
Senior Hazardous Materials Specialist

10-2-89
Date Approved

ATTACHMENT 8: LANDBAN CHECKLIST

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF HEALTH SERVICES
TOXIC SUBSTANCES CONTROL DIVISION
2151 BERKELEY WAY, ANNEX 7
BERKELEY, CA 94704

LAND BAN GENERATOR INSPECTION REPORT

EPA ID#: CAD 980 883 847

Facility Name: SRI INTERNATIONAL CORRAL HOLLOW EXPER. SITE

Facility Location: CORRAL HOLLOW ROAD
TRACY, CA 95376

Inspected By: GREGORY GRUNNER

Date of Inspection: 9/13/89

Background: This inspection was conducted as part of the Department's RCRA grant workplan commitment, and was intended to assess the facility's compliance with the federal requirements contained in 40 CFR Part 268.

Persons Present:

SRI:

MARIANO CAUNDAY, SAFETY SPECIALIST
TOM GAINES, TEST SITE SUPERVISOR
GARY GREENFIELD, MANAGER TECHNICAL SERVICES
SHERRY HANNON, DIRECTOR HEALTH & SAFETY

DHS:

GREGORY GRUNNER, HAZARDOUS MATERIALS SPECIALIST

Sr. HMS/Sr. WME: Patricia Payne DATE of REPORT 10/2/89

Land Disposal Restrictions
(Part 268)

	Yes	No	Comments
Did the facility handle any waste restricted from land disposal* since its effective prohibition date: 268.1(b) (See attached listings)			
F001 thru F005 spent solvents?	___	✓	
F020-23 and F026-28 Dioxins?	___	✓	
"California List" wastes?	___	✓	
First Third scheduled wastes?	___	✓	

Exemptions: Are the prohibited wastes exempted from land disposal restrictions because:

The waste is from conditionally-exempt small quantity generators? 268.1(c)(3)(all)	N/A		
A farmer is disposing of waste pesticides in accordance with 262.70? 268.1(c)(4)	___	___	
An "imminent endangerment" waiver has been granted under 121(d)(4) of CERCLA? 268.1(d)	___	✓	

If no restricted wastes were handled after the effective dates or an above exemption applies to all restricted wastes handled, do not complete remainder of this section.

Exceptions: Can the restricted wastes continue to be land disposed because:

A case-by case extension has been granted under Subpart C or 268.5, for the wastes handled? 268.1(c)(1)(all), 268.30(d)(3)(F001-5), 268.31(d)(3)(dioxins), 268.32(g)(2)(CA list), 268.33(e)(3)(1st 3rd)	N/A		
A no-migration petition has been granted under 268.6, for the wastes and units involved? (See 40 CFR 268.6(e-f) for operating requirements.) 268.1(c)(2)(all), 268.30(d)(2)(F001-5), 268.31(d)(2)(dioxins), 268.32(g)(1)(CA list), 268.33(e)(2)(1st 3rd)	___	___	
An exemption has been granted because the waste is certified treated by the best demonstrated available technology (BDAT)? 268.44(a)	___	✓	

*Land disposal means placement in or on the land, including a landfill, surface impoundment, waste pile, land treatment facility, salt dome formation, underground mine or cave, injection well, or placement in a concrete vault or bunker for disposal. 268.2(a) Injection wells are being covered under a separate schedule.

	Yes	No	Comments
A generator certifies a good-faith effort in compliance with 268.8 "soft-hammer" regulations? 268.1(c)(5)	N/A		

If any of the preceding exceptions apply, the attached effective 268 Subpart C dates and concentrations, Subpart D standards, and Subpart E storage restrictions do not apply. Waste analysis and applicable generator certification requirements still pertain.

Has the handler not merely diluted the restricted waste or treatment residue in order to achieve compliance? 268.3			

Storage:

Are restricted wastes only being stored where: 268.50-			
(a)(1) A generator is using tanks or containers while accumulating a sufficiently large batch to properly recover, treat, or dispose?			
(a)(2) A TSD is accumulating a batch as above? and:			
(i) Each container is marked with the contents and accumulation start date?			
(ii) Each tank is marked with the contents, accumulation start date, quantity of H.W., and/or the information is in the operating record?			
(c) The TSD can prove that any storage over one year was solely for the purpose of necessary accumulation? or:			
(d) The wastes are subject to an approved no-migration petition, case-by-case extension, a nation-wide variance, or a valid "soft hammer" 268.8 certification?			
(e) The stored wastes already meet any applicable treatment, concentration, or waiver standards?			
(f) After 7/8/87, are liquid hazardous wastes over 50 ppm PCBs stored for less than a year, and in a 761.65(b) (TSCA) complying storage area?	/		

See p. 268: 8 for off-site storage facility recordkeeping requirements.

	Yes	No	Comments
Generators: Waste Analysis			
If restricted wastes are generated on-site, has the generator, using knowledge or analysis, determined if the waste is restricted from land disposal? 268.7(a)	N/A		
Was the Paint Filter Liquids Test used to determine if waste sludges and solids were CA list liquids? 268.32(i)			
Did the generator determine if liquid CA list wastes have a pH of less than or equal to 2? 268.32(j)(1)			
Did the generator determine if liquid CA list wastes containing PCBs or HOCs were prohibited? 268.32(j)(2)			
Where waste treatment standards are expressed as concentrations in the waste extract (268.41), did any analysis include the TCLP (268 Appendix I)? 268.33(g)			
Notices, Certifications, and Demonstrations:			
If determined that the waste is restricted and requires treatment before land disposal, have they notified the treatment or storage facility with each shipment of waste? including: 268.7(a)(1)-			
(i) EPA H.W. number?			
(ii) Appropriate treatment standards and prohibitions?			
(iii) Manifest # for the waste?			
(iv) Available waste analysis data?			
If the waste is determined to be restricted but not require further treatment, has the generator submitted with each shipment to the treatment, storage or land disposal facility, a notice and a certification that the waste meets both treatment standards and applicable prohibitions? 268.7(a)(2)			
Did the notification include: 268.7(a)(2)(i)-			
(A) EPA H.W. number?			
(B) Appropriate treatment standards and prohibitions?			
(C) Manifest # for the waste?			
(D) Available waste analysis data?			

Land Disposal Restrictions - Continued
(Part 268)

	Yes	No	Comments
Was the following certification signed: 268.7(a)(2)(ii)	N/A		

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

If the generator's waste is subject to a national variance, an extension or an exemption, have they notified the receiving facility with each shipment of waste that the waste is not prohibited from land disposal? 268.7(a)(3)	N/A		
Did the notice include: 268.7(a)(3)-			
(i) EPA H.W. number?			
(ii) Appropriate treatment standards and prohibitions?			
(iii) Manifest # for the waste?			
(iv) Available waste analysis data?			
(v) The date the waste is subject to prohibitions?			
If determined that the waste is a First Third waste without treatment standards and not a CA list waste (and thus a "soft hammer" waste), have they notified the receiving facility with each shipment? including: 268.7(a)(4)-			
(i) EPA H.W. number?			
(ii) Appropriate certifications and the restrictions under 268.33(f) for "soft hammer" wastes?			
(iii) Manifest # for the waste?			
(iv) Available waste analysis data?			
If determined that the waste is restricted based solely on knowledge, is all supporting data used in the determination maintained on-site in the generator's files? 268.7(a)(5)			
Has the generator retained on-site a copy of all notices, certifications, waste analysis data, and other Part 268 records for at least five years? 268.7(a)(6)	✓		

NOTE: If the recipient of the generator's waste is not on the attached list (p. 11) of known land ban facilities, or if an off-site shipment without notification has occurred, indicate the receiving TSF facility or E-mail for proper follow-up.

	Yes	No	Comments
Generators of First Third "soft hammer" wastes (268.33(f)) shipped for land disposal:			
Prior to shipment for land disposal, has the generator certified and submitted to the R.A. a demonstration of a good faith effort to locate and contract with treatment and recovery facilities for the practically available treatment which provides the greatest environmental benefit? 268.8(a)(1-2)	N/A		
Did the demonstration include a list of facilities and representatives contacted, complete with addresses, phone numbers, and contact dates? 268.8(a)(2)			
Was a copy of the demonstration submitted to the receiving facility with the first shipment of waste, and the certification with each shipment of waste? 268.8(a)(3) or -(4)			
Are copies of the demonstration and certification kept on site for at least five years? 268.8(a)(3) or -(4)			
If the generator determined there is no practical treatment for his waste, did the demonstration include a written discussion and the following certification? 268.8(a)(2)(i)			

I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that disposal in a landfill or surface impoundment is the only practical alternative to treatment currently available. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

If the generator determines that there are practical treatments for the waste, did they contract to use the technology that they demonstrated yields the greatest environmental benefits? 268.8(a)(2)(ii)			
Did they include the following certification? 268.8(a)(2)(ii)		/	

I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that I have contracted to treat my waste (or will otherwise provide treatment) by the practically available technology that yields the greatest environmental benefit, as indicated in my demonstration. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

	Yes	No	Comments
Has the generator immediately notified the R.A. of any changes in the conditions on which the certification was based? 268.8(b)(1)		N/A	
If the R.A. invalidated a certification, has the generator immediately ceased shipments of the wastes, informed all facilities that received the waste, and retain records of the communication on-site in their files? 268.8(b)(3)			

	Yes	No	Comments
Treatment Facilities: Waste Analysis			
Has the facility tested their wastes as specified in their waste analysis plan (265.13)? 268.7(b)	N/A		
Where treatment standards are expressed as concentrations in the waste extract (268.41), has the facility tested the treatment residues or extract (using the TCLP, 268 Appendix I) to assure they met the applicable treatment standards? 268.7(b)(1)			
For CA list-only wastes, were the applicable 268.32 Paint Filter Liquids Test, pH test, HOCs, and PCB tests performed? 268.7(b)(2)			
For wastes with treatment standards expressed as concentrations in the waste (268.43), was the treatment residue, not an extract, tested? 268.7(b)(3)			
Notifications and certifications:			
Has the treater submitted with each shipment to the land disposal facility, a notice including: 268.7(b)(4)			
(i) EPA H.W. number?			
(ii) Corresponding treatment standard?			
(iii) Manifest # for the waste?			
(iv) Available waste analysis data?			
Has the treatment facility submitted a signed certification with each shipment of waste or treatment residue to the land disposal facility stating that the treatment standards in 268 Subpart D were met? 268.7(b)(5)			
For wastes with treatment standards listed as concentrations (268.41 or -.43) did the certification read: 268.7(b)(5)(i)	✓		

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operations of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to achieve the performance levels specified in 40 CFR Part 268 Subpart D without dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

	Yes	No	Comments
For wastes with treatment standards listed as technologies (268.42) did the certification read: 268.7(b)(5)(ii)	N/A		

I certify under penalty of law that waste has been treated in accordance with the requirements of 40 CFR 268.42. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

Treatment and Off-site Storage facilities:

Where waste or treatment residues are sent off-site for further management, did the sender comply with the notification and certification requirements as the generator of the waste? 268.7(b)(6-7)			
Where First Third "soft hammer" wastes are treated or stored, has a copy of the generator's valid certification and demonstration been retained? 268.8(c) and:			
Has the treater or storer forwarded copies of the generator's certification and demonstration (if applicable) to the facility receiving the waste or treatment residues? 268.8(c)(2) and:			
Has the treatment or recovery facility certified as follows with each shipment of waste that he has treated the waste in accordance with the generator's demonstration? 268.8(c)(1)	✓		

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operations of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with treatment as specified in the generator's demonstration. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

	Yes	No	Comments
reatment in surface impoundments exemption:			
If wastes otherwise prohibited from land disposal are treated in surface impoundments, has the facility met the following conditions: 268.4(a)			
(1) Treated, not just stored, the wastes in the impoundment?	N/A		
(2)(i) Analyzed all treatment residues (sludge and supernatant separately) to determine if they meet treatment and/or prohibition standards?			
(2)(ii) Removed annually all treatment residues (including liquids) that do not meet treatment or prohibition standards?*			
(2)(iii) Not placed the residues in another impoundment for subsequent management?*			
Has the facility certified that all impoundments used to treat restricted wastes meet design requirements (265.221(a)) and that the facility is in compliance with GW monitoring (265 Subpart F) requirements? 268.4(a)(3-4)			
Is there a principal means of treatment other than evaporation of H.W. constituents? 268.4(b)			
Does the waste analysis plan include the procedures and schedule for: 268.4(a)(2)(iv); 265.13(b)(7)-			
(i) Sampling the impoundment contents?			
(ii) The analysis of test data?			
(iii) The annual removal of residues which exhibit a H.W. characteristic, and: (A) Fail 268 Subpart D treatment standards? or:			
(B) Where no treatment standards have been established, such residues are prohibited from land disposal under: (1) 268.32 (CA list) or RCRA 3004(d)?		√	
(2) 268.33(f) (1st 3rd)?			

* Unless the wastes have a valid "good faith" certification under 268.8. If the annual flow through the impoundments is greater than the combined volume of the impoundments, the supernatant is considered removed.